

## Reply to Bianchi et al.: In Italy anti-asthmatic drug prescription is not always a reliable proxy of asthma

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As suggested by Bianchi et al. [1], we have conducted a sensitivity analysis of our previously published data [2], identifying treated asthmatics as those individuals with at least one prescription after the first year of life of any non-nebulised formulation of inhalatory anti-asthmatic drugs [3]. With this new criteria, 12,948 cases of asthma (8.5 % in our population) were detected. Antibiotic consumption in the first year of life significantly increased the risk of new-onset asthma at any age [IRR 1.32, 95 % CI 1.28–1.37]. Compared with our previous analysis [2], the risk of asthma occurrence at  $\geq 72$  months was unaffected [IRR 1.16 (95 % CI 1.09–1.23)], whereas the remaining risks were weakened [IRR 1.80 (95 % CI 1.68–1.94) at 13–35 months, IRR 1.23 (95 % CI 1.16–1.30) at 36–71 months]. Early antibiotic use was also associated with an increased risk of current asthma at age  $\geq 6$  years (IRR 1.21, 95 % CI 1.15–1.27).

Since nebulised formulations of anti-asthmatic drugs are frequently prescribed for respiratory infections [1], our previous definition may have misclassified as asthmatics a proportion of non-asthmatic subjects particularly in the 13–71 months groups and might have biased our results: children treated with antibiotics in the first year of life may be more predisposed to respiratory infections in early

childhood; alternatively, antibiotic use may be a marker of parental tendency to seek medications for children.

The definition proposed by Bianchi et al. [3] has been validated in a limited setting and the variability of its accuracy across different pediatricians was high. Therefore, it should be tested in different settings before being considered the gold standard for pediatric asthma detection using healthcare databases in Italy or elsewhere. Anyhow, our previous [2] and present results consistently show an association between early antibiotic use and later pediatric treated asthma across a wide range of asthma definitions.

### References

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